

### **Amendments to the Specification**

Please replace paragraph [0019] with the following amended paragraph:

[0019]       The quick interaction produced by ultrafast lasers can create changes in optical properties in small regions without transferring significant heat to the surrounding material. In the example of using ~~ablation~~ ablation to generate micro-voids, excessive heat transfer can result in the creation of cracks or other damage. Ultrafast pulses can cause ~~ablation~~ ablation, however, by direct transition from solid to plasma which results in relatively little heating of the surrounding material. Patterning with ultrafast pulses can therefore create complex patterns with repeatable result. In one example the three-dimensional pattern 44 is illustrated in Figure 2. The pattern is comprised of a plurality of first parallel planes 46 formed in the scintillator element 24. A plurality of second parallel planes 48 are formed perpendicular to the plurality of first parallel planes 46. In this pattern, a plurality of grid channels 50 in the scintillator element 24. These grid channels 50 can be utilized to guide optical photons to the photodetector 22.